

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

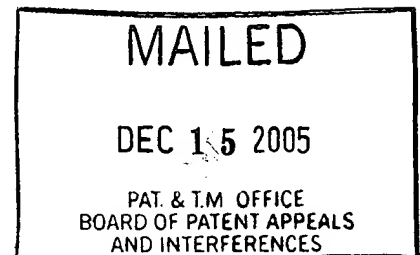
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DAVID M. EMERLING, PAWEL W. SLEBODA,
JOHN F. MOLA, ROBERT J. TRUE and DAVID J. PRINCE

Appeal No. 2005-2549
Application 09/382,851

ON BRIEF



Before THOMAS, RUGGIERO, and BLANKENSHIP, Administrative Patent Judges.

THOMAS, Administrative Patent Judge.

DECISION ON APPEAL

Appellants have appealed to the Board from the examiner's final rejection of claims 1 through 41, 43 and 44. As indicated beginning at page 3 of the answer, the examiner has allowed independent claims 43 and 44 and objected to the subject matter of dependent claims 12 and 24 as depending from rejected base claims. Claim 42 has been withdrawn. Therefore, claims 1

Appeal No. 2005-2549
Application 09/382,851

through 11, 13 through 23 and 25 through 41 remain for our consideration on appeal.

Independent claim 1 is reproduced below:

1. An audio system for use in a vehicle having a roof, the system comprising:

an acoustically-insulating headliner adapted to be mounted adjacent the roof so as to underlie the roof and shield the roof from view, the headliner having an upper surface and a sound-radiating, lower surface;

a source of audio signals;

an array of electromagnetic transducer assemblies supported at the upper surface of the headliner;

signal processing circuitry coupled to the assemblies for processing the audio signals to obtain processed audio signals wherein the assemblies convert the processed audio signals into mechanical motion of corresponding zones of the headliner and wherein the headliner is made of a material which is sufficiently stiff and low in density so that substantially the entire headliner acts as a single headliner speaker, diaphragm and radiates acoustic power into the interior of the vehicle with a frequency range defined by a lower limit of 100 hertz or less and an upper limit of 12 kilohertz or more and the processed audio signals at a low end of the frequency range are matched to the processed audio signals at mid and high ends of the frequency range.

The following references are relied on by the examiner:

Marquiss	4,385,210	May 24, 1983
Watanaabe	5,450,057	Sept. 12, 1995
Clark	5,754,664	May 19, 1998
House	5,887,071	Mar. 24, 1999
Warnaka	6,356,641	Mar. 12, 2002
		(Filed Sept. 25, 1996)
Azima	WO 99/11490	Mar. 11, 1999

All claims on appeal stand rejected under 35 U.S.C. § 103. As a basic combination of references, the examiner relies upon Warnaka in view of Clark as to claims 1, 9 through 11, 13, 15, 16, 35 through 38, 40 and 41. To this basic combination of references the examiner adds House as to claims 2 through 4, 14 and 17; adds Marquiss as to claims 5 through 8; adds Azima as to claims 18 through 23 and 25 through 34 and adds Watanaabe as to claim 39.

Rather than repeat the positions of the appellants and the examiner, reference is made to the brief and reply brief for appellants' positions, and to the answer for the examiner's positions.

OPINION

For the reasons set forth by the examiner in the answer, with additional emphasis provided by us in this opinion, we sustain the rejection of all claims on appeal under 35 U.S.C. § 103.

Since the examiner has allowed or indicated the allowability of the claims that comprise appellants' group II grouping of claims at page 6 of the principal brief on appeal, only arguments presented as to representative independent claim 1 on appeal remain for our consideration as to the group I group of claims at page 6 of this brief.

As emphasized throughout the teachings of Warnaka, even beginning in the last sentence of the abstract of this patent, the headliner of the vehicle is specifically taught to comprise the claimed diaphragm of the loudspeaker system taught in this reference. This is consistent with the examiner's assessment of this reference in the statement of the rejection of claim 1 at page 4 of the answer. Even the showings in Figures 7 through 12 of Warnaka are consistent with the showing in appellants' disclosed Figure 4 which places the speaker diaphragm behind the headliner 11, thus effecting the headliner to act as a diaphragm itself. The corresponding teaching at Figure 7 of Clark, even though it indicates that the speaker there is placed behind the headliner 30, has no corresponding discussion that Clark realizes the ability of such a system to function where the headliner 30 itself acts as a diaphragm of the speaker. Appellants' arguments in the brief and reply brief criticizing Clark for this teaching is misplaced since the basic teaching value relied upon by the examiner is found in the primary or initial reference to Warnaka.

We also note as well that page 4 of the answer's statements of the rejection recognizes that the piezoelectric transducers, taught in Warnaka as the primary basis for the speaker system, is also alternatively taught at column 11, lines 15 through 27 to comprise the claimed electromagnetic transducer assemblies. Appellants' assertion at page 9 of the principal brief and repeated in the reply brief that Warnaka does not enable other types of transducers taught at the column 11 teaching in this reference is misplaced since the reference positively teaches to substitute well known devices. A broad assertion of non enablement of the teachings of a reference is not well received. Appellants, on the other hand, have not presented any evidence before us that Warnaka is not enabled as to the other types of well known transducers specifically taught to be contemplated as substitutes for the preferred piezoelectric transducers in Warnaka. The fact that this latter type of transducer is preferred does not indicate to the artisan that such a teaching is a teaching away against the use of the identified other types.

Although not apparently appreciated by the examiner, a feature in the last clause of claim 1 on appeal relates to the respective corresponding zones associated with the electromagnetic transducers. The end of the Summary of Warnaka at column 2 clearly teaches the ability of this reference to achieve a stereo image such as to clearly strongly suggest to the artisan that corresponding left and right zones of speakers 15 shown in representative Figure 1 of this reference exist. This ability is also taught at column 5, lines 46 through 50; the paragraph beginning at column 8, line 10, and the discussion of Figure 16 at column 10. The teaching at this location as well of using prior art vehicle radios, CD players and tape players also suggests to the artisan well-known stereo or left and right speaker assemblies for audio imaging purposes. All of this clearly corresponds to the claimed corresponding zones of the headliner.

These zones are also taught in a complementary manner in Clark. Of the speakers 18 through 25 shown in Figures 1 and 2, for example, of Clark that are in the headliner 30, they are taught at column 4 beginning at line 7 to be grouped or zoned

according to the speakers 18 through 20, 21 through 23, 24 and 25. Additionally, the discussion at column 1 of Clark clearly makes known to the reader that it was known in the art to essentially zone a plurality of speakers into left, right, center, and front and back zones.

These zones as discussed and shown in Clark are also shown to be embodied according to various amplifiers and electronic circuits shown in Figure 9 of Clark within the audio system 10, and detail the general audio electronics module 16 in Figure 3. Initially, we note that the speakers are taught to have the claimed range as set forth at the bottom of claim 1 on appeal as the examiner has noted at column 4, lines 39 through 41. The description of the electronics associated with Clark's system begins at the bottom of column 6 through the end of the patent. Again, the stereo capability is plainly taught there utilizing the same prior art electronics devices such as a radio receivers, tape players, CD players, for example. Moreover, the teachings there also indicate that the electronics is capable of balancing the outputs of the various speakers in the various arrays including left and right and front and back speaker assemblies. Furthermore, the discussion at column 7 clearly indicates that

there are filtering and crossover networks as well as equalizers and electronic delay circuits to equalize frequency responses as to any given speaker to clearly teach to the artisan the low end and high end and mid range matching at the end of claim 1 on appeal.

It is thus apparent to us that from an artisan's perspective, the generic teaching of electronics modules in Warnaka as recognized by the examiner are detailed as a part of the prior art teachings in Clark. Thus, it would have been obvious to the artisan to have utilized these specific electronic circuit capabilities of Clark in the system of Warnaka as argued by the examiner. Moreover, as to the claimed frequency response, the actual frequency range listed is well known to be encompassed by that ability of the human to hear the frequencies between 100Hz and 12KHz.

In terms of the features recited at the end of claim 1 on appeal, the teachings at the top of column 1 of Warnaka are also suggestive of the more detailed features set forth in Clark such as equalization circuits and the control of sound amplitudes to achieve functions based upon frequency responses. This alone suggests the claimed matching as well at the end of claim 1 on appeal.

When we consider these teachings of both references against the arguments presented in the brief and reply brief, we are unpersuaded of patentability of the subject matter set forth in representative claim 1 on appeal. In direct contrast to the continued urging that the examiner has mischaracterized Warnaka and Clark, we find that the examiner's teachings are more consistent with those actually taught in the references from our study of them than appellants' characterizations. On the one hand, while Warnaka plainly teaches the ability of the headliner itself to perform a diaphragm function of a speaker system such as to radiate acoustic power into the interior of the vehicle, the examiner has never taken the position that Clark teaches this as urged, for example, at the bottom of page 9 of the principal brief.

From a motivation prospective, we are convinced that the artisan would have combined the teachings of Warnaka in view of Clark, and even the vice versa approach taken if Clark was utilized as the initial or starting point reference to which the teachings of Warnaka would have been combinable. In either case, the artisan would have arrived at essentially the subject matter represented by independent claim 1 on appeal. We therefore do

not agree with appellants' urging at page 12 of the principal brief that the examiner has exercised impermissible hindsight since all the examiner has done is utilized the teachings of the applied prior art prospectively.

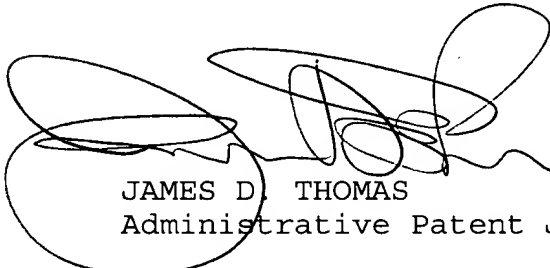


Finally, appellants' remarks with respect to dependent claim 5 at pages 13 and 14 of the principal brief on appeal are misplaced. Even though appellants make reference to the subject matter of claim 5 and discuss Marquiss, the actual arguments presented in the paragraph bridging pages 13 and 14 relate to subject matter set forth at the end of independent claim 1 on appeal. Thus, we are in agreement with the examiner's remarks with respect to this reference at the bottom of page 16 of the answer. Appellants have not argued the merits of the subject matter set forth in claim 5 on appeal nor urged before us that the examiner has exercised hindsight or mischaracterized the teaching value of Marquiss in the statement of the rejection of this claim beginning at page 9 of the answer.

In view of the foregoing, the decision of the examiner rejecting all claims on appeal under 35 U.S.C. § 103 is affirmed.

Appeal No. 2005-2549
Application 09/382,851

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(iv) (effective September 13, 2004).

AFFIRMED


JAMES D. THOMAS
Administrative Patent Judge)
)
)

JOSEPH F. RUGGIERO
Administrative Patent Judge)
)

HOWARD B. BLANKENSHIP
Administrative Patent Judge)

BOARD OF PATENT
APPEALS AND
INTERFERENCES

JDT:pgc

Appeal No. 2005-2549
Application 09/382,851

Brooks Bushman P.C./Lear Corporation
1000 Town Center
Twenty-Second Floor
Southfield, MI 48075-1238